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Practical and Professional Ethics Pre-Test

Step 1: Individually evaluate the scenarios below using the following three questions:

- Do you think this situation is common/realistic? Yes or No
- Do you think this situation or activity is Ethical or Unethical?
- In general would others agree with your answer to Q #2? Yes or No

A. Email Scenario

- **An employee uses his/her computer at work to send e-mails to friends and relatives.**
- Do you think this situation is common/realistic? Yes or No
- Do you think this situation or activity is Ethical or Unethical?
- In general would others agree with your answer to Q #2? Yes or No

B. Betting Pool

- **While reviewing e-mail messages a manager discovers someone using the company's e-mail system to operate a weekly betting pool.**
- Do you think this situation is common/realistic? Yes or No
- Do you think this situation or activity is Ethical or Unethical?
- In general would others agree with your answer to Q #2? Yes or No

C. Political Material

- **An employee sends political campaign material to individuals on her employer's/company's e-mail mailing list.**
- Do you think this situation is common/realistic? Yes or No
- Do you think this situation or activity is Ethical or Unethical?
- In general would others agree with your answer to Q #2? Yes or No

D. Computer Monitoring

- **A company occasionally uses software to monitor the productivity of its staff. It only uses the software to monitor employees thought to be wasting time.**
- Do you think this situation is common/realistic? Yes or No
- Do you think this situation or activity is Ethical or Unethical?

- In general would others agree with your answer to Q #2? Yes or No

E. Copying Software

- **An employee makes a copy of software from work and installs it on his/her home computer. No one uses the computer while he/she is at work, and the home computer is used only to finish projects from work**
- Do you think this situation is common/realistic? Yes or No
- Do you think this situation or activity is Ethical or Unethical?
- In general would others agree with your answer to Q #2? Yes or No

F. Notebooks to Teachers

- **In order to improve public education, the government provides notebook computers to a large number of public school teachers.**
- Do you think this situation is common/realistic? Yes or No
- Do you think this situation or activity is Ethical or Unethical?
- In general would others agree with your answer to Q #2? Yes or No

G. Doing Homework

- **An employee uses his or her computer at work to complete a homework assignment for school.**
- Do you think this situation is common/realistic? Yes or No
- Do you think this situation or activity is Ethical or Unethical?
- In general would others agree with your answer to Q #2? Yes or No

Reference

- Some scenarios are based on the textbook: Gary B. Shelly, Thomas J. Cashman, Misty E. Vermaat, **Discovering Computers 2005: A Gateway to Information**, Web Enhanced-Complete, Shelly Cashman Series, Course Technology: Boston, MA. p.589.

Step Two: Informally share or discuss your answers with the class

- Use the space below to make notes
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Step Three: Ethical Decision Making Guidelines--Four Informal Tests:

- **REVERSIBILITY:** Would I think this a good choice if I were among those affected by it?
- **PUBLICITY:** Would I want this action published in the newspaper?
- **HARM:** Does this action do less harm than any available alternative?
- **FEASIBILITY:** Can this solution be implemented given resource, interest, and technical constraints?

Scenario	Reversibility	Publicity	Harm	Feasibility
A. (email)				
B. (Betting Pool)				
C (Political Material)				
D (Monitoring)				
E (Copying Software)				
F (Notebooks				

for Teachers)				
G (Homework)				

Step Four: Divide into groups, re-evaluate the remaining scenarios using the above tests, then share or discuss your group's answers with the class.

Practical and Professional Ethics Pre-Test

<https://cnx.org/content/m14463/>

This media file contains the Pre-Test in MS Word format. It has been designed for Introduction to Computers classes and offers scenarios devoted to ethical issues that arise in computing.

The goal of this exercise is to help you become aware of the ethical issues that arise in computing on a day to day basis.

- You now know how to recognize ethical problems in the real world
- You are already in the habit of using ethical concepts and principles in your everyday thinking.
- You have learned a series of ethics tests that will help you formulate and refine ethical arguments.
- Continue thinking about how ethical issues arise in the real world. Included with this module are some links designed to help you continue to reflect about ethics in computing.

EAC Toolkit Instructor Module: Practical and Professional Ethics Pre-Test

REFERENCE OR LINK TO STUDENT MODULE

- Link or Reference to the corresponding student module in Connexions® (cnx.org)
- Reference or Link to the corresponding student module. For example:
 - Link (URL) to a module or resource available online
 - Reference to a textbook case or exercise
 - Reference to a magazine or journal article
 - Reference to a news story
 - Reference to a movie or show
 - Etc.

INSTRUCTOR RESOURCES(Sharing Best Practices in EAC!)

This section contains information related to the above referenced Student Module. The intent and expectation is that the information contained in this section will evolve over time based on the experiences and collaborations of the authors and users of the Student Module and this Instructor Module. For example, the authors, collaborators or users can provide the following kind of information (mainly directed at or intended for instructors).

Module-Background Information

Originally, this exercise was presented in a textbook by Gary B. Shelly, Thomas J. Cashman, Misty E. Vermaat entitled, *Discovering Computers 2005: A Gateway to Information, Web Enhanced-Complete*, Shelly Cashman Series, Course Technology: Boston, MA. P. 589. In its initial form, it prompted students to reflect on the distinction between legal and illegal, criminal and legitimate in the context of short scenarios taken from the area of computing. However, Dr. Cruz has redesigned this exercise to introduce basic ethical issues and skills in computing. While its first

instantiation occurred in a presentation in a retreat held in Marciao, Puerto Rico in 1999, other instantiations include its being a regular feature in introduction to computers classes, engineering ethics classes, faculty development workshops, and special ethics across the curriculum integration efforts in Electrical Engineering. In the last version, Luis Jimenez and Efrain O'Neill used this exercise as a pre- and a post-test activity to assess the effectiveness of their more expansive module for introducing engineering ethics to students in electrical engineering capstone design courses.

This Pre-Test has been developed and refined through a variety of National Science Foundation supported grants in ethics across the curriculum in practical and professional ethics, especially NSF SBR-09810253 (1998-2000) and NSF SES 0551779 (2006-2008).

Learning Objectives

What are the intended learning objectives or goals for this module? What other goals or learning objectives are possible?

Skills Objectives

- This activity is based on four skills for ethical empowerment that have been detailed in Cruz/Frey 2003: ethical awareness, ethical evaluation, ethical integration and ethical prevention.
 - This list of moral skills is by no means exhaustive or exclusive. For example, it does not cover moral imagination, moral creativity, becoming a member of a professional community, or perseverance.
 - Readers are encouraged to consult the moral development skills that are available in Kohlberg, Rest, Huff/Frey, and the widely accepted Hastings Center List. Bibliographical references below will provide ample resources that different institutions or groups can use to build a list of skills of moral development to fit their needs and resources.
1. **Ethical Awareness** consists of the student's ability to select and frame moral issues and problems that arise in ordinary, day-to-day research practice.

2. **Ethical evaluation** skills allow students to bring ethical principles, concepts, theories, and values to bear on the problems they identify in research scenarios and use these to accomplish moral reasoning and judgment.
3. **Ethical integration** skills give ethical principles, concepts, theories, and values a constitutive role in creating and designing solutions to moral problems and generating decision alternative that integrate moral (and non-moral) values.
4. **Ethical prevention** skills are employed to identify value conflicts inherent in research projects and the socio-technical systems into which they are integrated. Prevention skills move from early identification of these conflicts to the development of counter-measures that prevent them from developing into full-blown moral problems or dilemmas.
5. These objectives form a series in which the more complex skills presuppose and build upon the simpler ones: ethical evaluation takes place when awareness skills are mastered; integration presupposes evaluation and awareness; prevention builds upon the mastery of the three more basic skills. To reflect this serial relation of ethics objectives, ethics across the curriculum modules should be sequenced so that subsequent interventions build upon the skills mastered in earlier ones. This pre-test, by generating awareness, can help prepare the foundation for more advanced interventions.
6. Those who adopt this module are cautioned against taking this idea of sequential development to its extremes. The sequence is not unidirectional; students can and should work on maintaining awareness even after they have practiced prevention. More than one skill can be pursued at a time. Students could participate in EAC activities out of sequence and still benefit. But ordering these workshops sequentially and generally requiring students to move from awareness, through evaluation and integration, to prevention makes sense. In general, interventions targeting simpler skills should precede those targeting more complex and advanced skills.

These content objectives come from AACSB criteria. They have been quoted from the AACSB Ethics Task Force Report.

- **Ethical Leadership (EL):** (a) “Expanding...awareness to include multiple stakeholder interests and...developing and applying...ethical decision-making skills to organizational decisions in ways that are transparent to...followers.” (b) “Executives become moral managers by recognizing and accepting their responsibility for acting as ethical role models.”
- **Decision-Making (DM):** “Business schools typically teach multiple frameworks for improving students’ ethical decision-making skills. Students are encouraged to consider multiple stakeholders and to assess and evaluate using different lenses and enlarged perspectives.”
- **Social Responsibility (SR):** “Businesses cannot thrive in environments where societal elements such as education, public health, peace and personal security, fidelity to the rule of law, enforcement of contracts, and physical infrastructures are deficient.”
- **Corporate Governance (CG):** (a) “Knowing the principles and practices of sound, responsible corporate governance can also be an important deterrent to unethical behavior.” (b) “Understanding the complex interdependencies between corporate governance and other institutions, such as stock exchanges and regulatory bodies, can be an important factor in managing risk and reputation.”

Short Bibliography on Moral Development and Ethics Skills

- Kohlberg, Lawrence. 1981. **The Philosophy of Moral Development: Essays on Moral Development**, vol.1. San Francisco: Harper and Row.
- Pritchard, Michael S. 1996. **Reasonable Children: Moral Education and Moral Learning**. Lawrence, KS: University of Kansas Press: 11.
- Rest, James, Narvaez, Darcia, Bebeau, Muriel, and Thoma, Stephen. 1999. **Postconventional Moral Thinking: a Neo-Kohlbergian Approach**. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Huff, Chuck and Frey, William. 2005. "Moral Pedagogy and Practical Ethics" in **Science and Engineering Ethics** 11(3): 394-397.
- Cruz, Jose and Frey, William. 2003. "An Effective Strategy for Integrating Ethics Across the Curriculum in Engineering: An ABET 2000 Challenge" in **Science and Engineering Ethics** 9(4): 546-547.

Instructional / Pedagogical Strategies

Which pedagogical or instructional strategies are used or suggested for this module. (For example: Discussion/Debate, Decision-Making Exercise, Presentation, Dramatization or Role Playing, Group Task, Formal or Informal Writing, Readings, among others)

This module employs the following pedagogical strategies:

- **General Class Discussion:** Students read the scenarios and answer the questions. Then the instructor engages the class in a discussion of the first scenario. Taking the pre-test before the discussion "primes the pump" so to speak. It gets students thinking about ethics and computing and thus readies them for a productive discussion.
- **Cooperative Learning:** If the instructor has time, he or she can organize small group discussions of the scenarios in the Pre-Test. Students can be asked to reach an agreement on their assessment of a scenario, debrief to the instructor and the class, and reflect on the process of how they reached agreement. If they fail to reach agreement, they can be asked to reflect on the obstacles to consensus. Thus, students engage in cooperative learning and reflect on the dynamics of small group interaction.
- **Eliciting Knowledge:** With practice, the instructor leading the Pre-Test exercise can learn to elicit knowledge from students during the discussion. Certain phrase that students use "encode" the moral schemas we have developed to make sense of situations and help us recognize and respond to the moral aspects of our situations. In a section below, there is a list of student comments and a discussion of how these comments tie into certain ethics tests and the underlying ethical approaches. Students can become aware of ethics by, paradoxically, being led to see that they are already thinking ethically. This recognition of embedded ethical thought is a powerful tool for generating ethical awareness in students.
- **Critical Thinking:** This module can also be used to promote critical thinking skills. The discussion leader can underscore and classify the argument techniques students are using through metacomments. (E.g., You are making a use of analogical argumentation by comparing sending e-mails with making phone conversations.") The discussion

leader can also make just-in-time suggestions to students on how to formulate their arguments by helping them to see the relation between premises and conclusions, distinguishing the empirical and value components of ethical arguments, and discussing the difference between emotional and rational persuasion. Doing this through just-in-time insertions requires practice and patience but this exercise is an effective means to carry out these objectives.

- **Structured Discussion:** Ethics tests (reversibility, publicity, harm) are introduced into the second half of this exercise to provide students with aids in structuring their discussion of ethical issues and in making ethical arguments and justifications. The students discuss a scenario without the tests; then they discuss a scenario with the ethics tests. When asked to reflect on the two experience, they begin to see how ethical approaches can help us to hold structured and orderly conversations about even contentious ethical issues.
- **Pre-Module Skills:** This module is an introductory exercise designed to build basic skills in moral reasoning and judgment. As such it can be used at an introductory level with little or no advanced preparation. In fact, this activity has, as was mentioned above, been used as an assessment tool to gain a rough idea of where students are in their moral development. Using Kohlberg's scale of moral development, students can be roughly located in terms of pre-conventional, conventional, and post-conventional moral development by listening carefully to the kinds of justifications they provide for their positions vis a vis the scenarios.

Assessment / Assurance of Learning

What assessment or assurance of learning methods are used or suggested for this module? (For example: 1-minute paper, Muddiest Point, Quiz/Test Items, Oral Presentation, Student Feed-back, among others). What did or didn't work?

EAC Matrix for Pre-Test

<https://cnx.org/content/m14464/>

This matrix maps the Pre-

Test on three assessment spaces by (1) locating it within the ADEM curriculum, (2) identifying the targeted moral learning objectives, and (3) singling out the AACSB ethics criteria targeted in the exercise.

Muddiest Point Exercise

<https://cnx.org/content/m14464/>

This short assessment exercise allows students to reflect on the strong and weak points of this module.

General EAC Module Assessment Form

<https://cnx.org/content/m14464/>

This brief assessment form, adopted from one used in EAC workshops by Michael Davis of IIT, provides a general comprehensive survey of the different aspects of this activity.

Pedagogical Commentary

Any comments or questions regarding this module? (For example: suggestions to authors, suggestions to instructors (how-to), queries or comments directed to EAC community, pitfalls or frustrations, novel ideas/approaches/uses, etc.)

Pre-Test

This exercise provides students from a variety of disciplines who are in their first or second year of college with basic skills to help them develop arguments that support or refute ethical positions. Also, it will allow students to practice skills that can be applied outside the context of computing. A textbook exercise provides the template from which this activity has been developed. Originally, it asked students to consider whether the activity depicted in a scenario constituted a computer crime. This modification provides more room for discussion, helps illustrate that ethical issues are not just "black or white," and allows students to discuss related ethical issues outside the context of computers and information and technology.

Step 1: Students individually evaluate and discuss whether scenarios are ethical

- The first step of the exercise is to have students individually evaluate 8 to 10 scenarios using the following 3 questions:
- 1. Do you think this situation is common/realistic? (Yes or No)
- 2. Do you think this situation is ethical or unethical? (Ethical or Unethical)
- 3. Do you think others may disagree with you? (Yes or No)
- The first question emphasizes the fact that we are considering real-world issues. The second question asks students to provide an intuitive answer by evoking an honest, anonymous opinion on the issue. The third question serves to illustrate that the issues are not "black or white".
- Scenarios can be taken from a variety of sources: textbook exercises, newspapers, movies, and from any other source that suggests something provocative and realistic.

Step 2: Informal Discussion of Scenarios

In step one, students begin by reflecting on the issues individually. In step two, the instructor leads an informal discussion of a few scenarios. For example, the class could consider whether using a computer at work to send e-mail to relatives is ethical. This simple statement can easily generate 20 to 30 minutes of lively discussion. Our experience has been that some students will advocate one extreme (that the action is unethical) while others will argue the other extreme (that the action is customary and ethically permissible). Many students will try to secure the middle ground by citing circumstances in which it is ethically permissible (when workers are taking a break) and when it is impermissible (when a worker spends too much time doing this).

For example some specific examples from our students are following:

- "I don't want to be treated as a slave or robot."
- "These people get paid well to work."
- "Some work hard, while others surf the Internet?"
- "As long as my boss doesn't see me ..."
- "I minimize the browser ..."
- "Maybe someone opens an e-mail with a virus ..."
- "Maybe the person doesn't have a PC at home?"
- "Isn't this similar to using the phone to call a friend?"
- "Everybody does it!"

This exercise gives students practice framing moral arguments. Students will offer analogies based on the telephone, fax, or regular mail. Many offer examples from their own real-world experiences. Discussing the scenarios familiarizes students with the complexity of the issues, gives them practice in drawing analogies with their own experiences, and helps them to frame moral arguments.

Step 3: Ethical Decision-Making Tests Provide Insight and Focus

The informal group discussion sets up the next stage since students already have raised many relevant issues in their comments. In the third step, several intuitive ethical tests are applied to two or three of the scenarios.

Ethics Tests

- **Reversibility:** Would I think this a good choice if I were among those affected by it?

- **Publicity:** Would I want this action published in the newspaper?
- **Harm:** Does this action do less harm than a possible alternative?
- **Code Test:** Does this action violate a code provision?
- These tests help students to formulate supporting arguments that evaluate the scenarios. Often during the informal group discussion, these tests have already been employed either by the students themselves or informally by the instructor. In either case, it is important for students to realize that they are thinking already in ethical terms and that their ethical reflection is complex and sophisticated. It is also helpful to use local idioms for expressing these notions (especially in Puerto Rico). For example, the expression, "putting yourself in someone else's shoes" is a good way of presenting the reversibility test. This helps students realize that their parents, teachers, and religious leaders have passed on much of this "wisdom" to them.
- It is very helpful to refer to students' remarks as a means to explain the tests and help them realize that they already incorporate these notions in their decision-making.

Step 4: Student Groups Re-evaluate Scenarios with Ethics Tests

The next step allows students to apply the ethics tests. In groups of three or four, the students select two or three scenarios and re-evaluate them using the tests to sharpen their ethical arguments. The results are impressive: students quickly reach a consensus, back their positions with well-constructed ethical arguments, and emerge from the discussion with more confidence. They are, in short, ethically empowered. A debriefing session follows in which students summarize their group results with the rest of the class. This, in turn, generates more discussion.

Step 5: Brief Discussion of the Importance of Ethics

At this stage of the exercise a brief discussion on the importance of ethics helps synthesize the exercise. Issues that can be raised: (1) awareness that ethics affects our behavior, (2) incorporating ethical considerations early into the decision-making process helps to avoid ethical dilemmas later on, (3) we can learn from past problems and adjust future actions to avoid their repetition, (4) everybody practices ethics, not just the so-called expert, and

(5) generally speaking, "Good ethics is good business." We conclude the exercise with the slogan, "Be Ethical, be Wise."

Step 6: Some students want to learn more...where to go from here?

Past experience indicates that this exercise has had an impact on students. Frequently, they ask for more information about ethics. We have made the following suggestions: take a formal course in engineering or business ethics, watch for ethical issues in the media, study professional and corporate codes of conduct, and do not ignore ethics-related chapters/excerpts available in many textbooks. Finally, we encourage them to discuss related situations (scenarios or experiences) with friends.

Conclusion

- The goal is to promote ethical-empowerment in our students. What has impressed us most by this exercise is the way in which it changes the student's perspective on ethics in the direction of empowerment. In fact, it promotes ethical-empowerment in several ways:
- Students learn to recognize ethical problems in the real-world.
- Students discover that they unconsciously employ ethical concepts and principles in their thinking. Thus, using the ethics tests helps students to recognize and practice the ethics skills they already possess.
- It gives students practice (and confidence) in formulating ethical arguments.
- It excites an interest in ethics that often leads to follow-up activities.
- Instructors who are not experts in ethics can use this exercise and integrate it into their classes. In fact, by carefully selecting scenarios, instructors can help students to see how ethics is a natural and essential part of real-world engineering practice.

Appendix (Annotated)

Additional information or annotations for instructors regarding the Student Module Appendix

Being an Ethical Job Candidate

This student module has been developed to help students in the practical and professional areas become aware of the ethical issues that often arise in the pursuit of employment. The point of departure is the "Guidelines to Professional Employment for Engineers and Scientists" set forth by the IEEE (Institute of Electrical and Electronics Engineers) and republished by Stephen Unger in his book, *Controlling Technology: Ethics and the Responsible Engineer*, 2nd Ed. Each intermediate moral concept set forth in the guidelines is challenged by a case. Students from past professional and occupational classes at the University of Puerto Rico at Mayaguez have provided the cases. While realistic, these cases are not necessarily representative of actual historical events since in some occasions confidentiality concerns have led to the altering and generalizing of some facts. To add another dimension to this module, each case requires a decision as well as the application of concepts to realistic situations. This student module is being developed as part of an NSF-funded project, "Collaborative Development of Ethics Across the Curriculum Resources and Sharing of Best Practices," NSF SES 0551779.

Module Introduction

Chances are that you are either actively involved in an effort to find work or soon will be. Based on stories that come from the job-hunting experiences of UPRM students in Practical and Professional ethics classes, this module presents the employment guidelines put out by the IEEE, challenges these guidelines with realistic cases and scenarios, and provides you with decision-making tools to tackle these ethical complexities. This module was developed for and recently presented in Mechanical Engineering Capstone Design courses. It forms a part of the EAC Toolkit funded by the National Science Foundation, SES 0551779.

The details of the IEEE Professional Employment Guidelines for Engineers and Scientists have been reprinted by Stephen Unger in his book, *Controlling Technology: Ethics and the Responsible Engineer*, 2nd Ed. NY, NY: John Wiley and Sons, Inc.: 315-329. We condense these guidelines to a few concepts. Each concept will be presented and followed by one or more cases designed to test the concept in its application.

Sincere Interest

- Job candidates are obliged to apply only for those positions in which they are sincerely and seriously interested.
- "Sincere interest" has several meanings but two stand out here. First, they should not agree to an interview after having accepted a job offer from another company. Second, they should be qualified according to the requirements listed in the job application.
- The following scenarios test this concept in different ways. "Bring Your Friends" raises the issue of whether not being seriously interested in a job is ok if the interviewer knows this and initiates the interview for other reasons. "Working for Mega Weapons" asks whether moral or conscience-based conflicts cancel out "sincere interest."

1. Bring Your Friends:

Maria, a talented student in mechanical engineering has accepted an offer to work for a prestigious firm. Then she receives a call for an interview with firm X. She tells them that she has already accepted an offer from Y, but the caller says that doesn't matter. "We want to interview you anyway so that we can document affirmative action compliance. In fact, if you have any friends who are similarly situated [i.e., women who come from minority groups] please give us their names. We will fly all of you to our central headquarters for interviews at our expense. It will be a good vacation.

What would you do if you were in Maria's place?

- Accept the interview offer but not try to recruit any of your friends.
- Accept the interview offer and try to recruit some of your friends to go along.
- Refuse to accept the interview on moral grounds.
- Refuse to accept the interview because it would interfere with the class in Practical and Professional Ethics that you are currently taking.
- Report this company to the appropriate governmental agency since they are clearly distinguishing against candidates from so-called minority groups
- Your solution....

2. Working for Mega Weapons

Jorge is an unemployed computing professional. He is also a pacifist. Antonio, a friend, has a job prospect. Mega Weapons is looking for someone with Jorge's expertise. Yes, he will be spending time developing the guidance systems for "smart bombs." But the accurate, smart bombs will be less likely to go astray and kill innocent civilians. Jorge, however, remains unimpressed by this. "They're still bombs," he says, "and their primary purpose is to kill human beings. Besides, I would compromise myself by even accepting an interview. What if they ask me about my views on war? I would have to tell them the truth and then they would dismiss me as a candidate." Jorge tells his wife about the job prospect. While she supports his pacifism, she tells him that she can't continue indefinitely as a waitress; her job is preventing her from completing her college degree and keeps her away from the children. She asks Jorge if there is any way he can reconcile this job with his pacifism. What should Jorge do?

What should Jorge do if he receives a request to interview with Mega Weapons?

- Jorge should not go to the interview because he is not "sincerely interested" in this position. His pacifism cancels out any possibility of "sincere interest".
- Jorge should accept this interview request because his obligations to his family outweigh matters of personal morality and personal conscience such as his pacifism.
- Jorge should accept this interview and a job offer, if one follows, precisely because of his pacifism. If he refuses then Mega Weapons will find a war monger who will do all kinds of harm. By taking the job and using his skills to minimize harm in weapons development Jorge is doing his best to realize the pacifist agenda.
- Jorge should set aside his pacifism and use his engineering skills to carry out politically sanctioned weapons projects just as a doctor should set aside personal likes or dislikes of a patient and exercise his or her skills dispassionately and professionally.
- Your solution...

Full and Honest Disclosure

- The job candidate is required to provide full information relative to the job description as advertised. This would include elements such as:
- Educational Experience
- Prior work experience
- Other job relevant skills and knowledge
- Do religion, sexual preference, marital status, political viewpoints, and recreational practices constitute job relevant matters? In other words, are these matters private to the job candidate or are there occasions when the prospective employer has a right to access this information?
- Distinguish between information to which an interviewer has a right and the means the interviewer has the right to use to uncover this information. Do interviewers have the right to require that job candidates (1) take polygraph examinations, (2) undergo drug tests, (3) take psychological profiling exams, (4) be subjected to "staged crises" to find out how a candidate would handle such an event? These may constitute information areas to which the prospective employer has a right, but does the interviewer also have a right to use these means to obtain this information?

The following scenario examines whether full disclosure requires that one make known one's personal moral convictions.

3. Are You a Bleeding-Heart Pacifist?

Jorge is a pacifist. He is also an unemployed computing professional. Against his better judgment, his wife and friend, Antonio, have talked him into interviewing with Mega Weapons for a new opening working on the guidance systems of non-nuclear missiles. During the interview, the employer remarks that Mega Weapons has had trouble in the past with employees who have moral qualms about working on weapons projects. He then turns to Jorge and asks, "You're not one of those bleeding-heart pacifists are you?" How should Jorge answer this question?

- Jorge should not reveal his pacifism. It is obvious that this would prejudice Mega Weapons against hiring him. He must try to get the job at all costs.
- Jorge should take the time to explain his pacifism, and how he sees himself fitting into different military projects. For example, he could

emphasize his concern and expertise in making weapons guidance systems as accurate as possible to minimize "collateral" damage during use. He could use this interview to negotiate guidelines for projects that he would find compatible with his convictions.

- Jorge should immediately exit the interview. It is obvious that Mega Weapons would exhibit no sympathy or support for his pacifism.
- Your solution.

Moral Conflicts and Full and Honest Disclosure

Consider this Analogy

You are a physician on call for Saturday night in a remote country hospital. You receive an emergency call to come immediately and perform, life-saving surgery on a patient in critical condition. The surgery is routine for someone of your skills but the situation for the patient is critical. You can save his life if you act quickly. You speed to the hospital, scrub, suit up and walk into the operating room. There lying unconscious on the operating table is your worst enemy. This is a person whose entire life has been devoted to making you miserable. You have no doubt that if you save his life he will continue to inflict even more suffering on you. You hesitate. You could botch the operation and probably get away with it. But no one else can perform the surgery. You successfully execute the operation and save the patient's life. After all, as a physician you have the obligation to set aside personal issues and feelings and do your duty as a professional to the best of your abilities.

The general consensus is that the doctor is morally, professionally, and even legally obligated to perform the operation. Professionalism, most argue, requires that we set aside personal issues and personal morality and do our duties as professionals. Samuel Florman argues that engineers as professionals have the same duty by analogy. If society asks an engineer to carry out a task that is socially sanctioned and politically validated, then the engineer has the duty to set aside whatever moral or conscience-based objections he or she may have and carry out the engineering activity. So even those who are pacifists and object to weapons projects may have, under the right conditions, the obligation or duty to set aside personal morality and work on the project. Do you think Florman's analogy holds?

Put yourself into the position of Jorge? Does he have the obligation to set aside his pacifism as a merely personal belief and carry out his orders as an engineer?

Here is the central part of Florman's argument from analogy quoted from his article, "Moral Blueprints" (Harper's, October 1978, pp. 0-33):

If each person is entitled to medical care and legal representation, is it not equally important that each legitimate business entity, government agency, and citizens' group should have access to expert engineering advice? If so, then it follows that engineers (within the limits of conscience) will sometimes labor on behalf of causes in which they do not believe. Such a tolerant view also makes it easier for engineers to make a living.

What do you think Florman means by "within the limits of conscience"?

Nathaniel Borenstein a widely respected expert on intelligent systems found himself under just this kind of situation. A committed pacifist, he assiduously avoided getting involved in military projects, even when asked repeatedly by representatives of the military. But something said to him by one of these military representatives led him to reassess his position. Borenstein was asked to develop a training simulation to teach individuals how to work with the nuclear missile launching system. When he found that it involved "embedded training" he became very concerned. To appreciate the full extent of his concern and the reasons that persuaded him to get involved in **this** project, it is best to turn to his own words:

Borenstein on Embedded Training

Embedded training, in particular, struck me as a very poor idea. Training by computer simulation has been around for a long time. Embedded training takes this one step further: it does the simulation and training on the actual command and control computer. To exaggerate slightly, whether or not anyone actually dies when you press the "launch missiles" button depends on whether or not there is a little line at the top of the screen that says "SIMULATION."

Borenstein continues

Such a system seems almost designed to promote an accidental nuclear war, and this thought was what persuaded me to attend the workshop in the first place. One can all too easily imagine human error--"I could have **sworn** it was in the 'simulation' mode--as well as frightening technical possibilities. Perhaps, due to some minor programming bug, the word "SIMULATION" might fail to disappear when it was supposed to. Someone approaching the computer would get the wrong idea of what it was safe to type.

These quotes are taken from: Nathaniel S. Borenstein, "My life as a NATO collaborator" in the Bulletin of the Atomic Scientists, April 1989: 13-20.

A Thought Exercise

- Think of Borenstein's concerns and eventual actions in light of Florman's analogy.
- Does Borenstein have the obligation to set aside his pacifism to work on correcting this training problem?
- Does Florman's analogy provide the justification for this? Or is Borenstein acting on the basis of a very different set of arguments?
- Assume that you are a committed pacifist. Was Borenstein right to set aside his beliefs to work on this project? Did he really set aside his beliefs?

Honoring Confidentiality Agreements and Waiving Employment Rights

- More and more, prospective job candidates are being required to sign "non-disclosure agreements" as a part of their employment contract. These agreements commit engineers and professionals, not only to non-disclosure of company secrets, but to not seeking employment with competitors for three to five years after leaving the company.
- Non-disclosure agreements are designed to balance an employer's concern for protecting confidential information with an employee's right to job mobility based on freedom of association. But a new and vital concern to engineers and professionals on the point of employment is just what they are committing themselves to when they agree to such contractual provisions.

- The prospective employee's responsibility to honor confidentiality agreements is grounded in the employer's obligation to full disclosure of the terms of employment. Balancing these is difficult in the interviewing and hiring processes as the following cases demonstrate.
- New employees are also being asked to sign agreements waiving their right to sue the company should they be fired. In lieu of the right to sue for wrongful dismissal, companies ask that employees agree to binding arbitration carried out by an outside arbitrator. Binding arbitration is...binding, that is, it obligates both of the disputing parties to a decision decided upon by an outsider. And the company reserves the right to name the arbitrator. Companies have done this to protect themselves against the erosion of the doctrine of "employment at will" toward the notion of "just cause." But the scenarios below invites you to think about how much job candidates are being asked to give up when they waive their right to sue for wrongful dismissal.

4. We Protect Our Property

Pedro has a job offer from Z-Corp, a manufacturer of computer chips. Z-Corp has recently had problems with its competitors who have tried to hire away its employees to get information about their chip production process. In response, Z-Corp now includes a clause (non-disclosure agreement) in its employment contract that prohibits employees from working with competitors for up to five years. Should Pedro be concerned about this? What should he do?

What should Pedro do?

- He should refuse to sign such an agreement even if it costs him the job.
- He should sign the agreement without complaint. It's a nasty world out there, and he is lucky to have this job.
- Pedro should ask the company to be more explicit about the confidentiality concerns they are trying to protect. He should also ask whether it is necessary to restrict his future employment options to such an extent.
- Your solution....

5. You Can't Sue Us

Marta, a student at an Hispanic university has just accepted a job with a major U.S. corporation. The job seems ideal. However, she notices that her employment contract includes a clause to the effect that she cannot sue the corporation for wrongful dismissal should she be fired or laid off. Instead, the dispute would be resolved by an outside arbitrator. The arbitrator's decision would be binding on both parties. Moreover, the arbitrator would be chosen by the company. Marta suspects that this agreement represents a "hard line" stance that the company has taken on wrongful dismissal suits. What should she do?

What should Marta do?

- She should refuse to agree to waiving any of her legal rights. Not to do so would leave her vulnerable to being fired by the company for any reason whatsoever, even morally questionable reasons.
- She should ask for more time to study the employment contract before signing. Then she should examine very carefully the company's past employment issues. Maybe the company's record is questionable and this has led them to take such a stance toward wrongful dismissal suits.
- Marta should ask for more time to think about the employment offer and the contractual terms. Then she should try to find another position and only if she fails in this effort should she accept the offer as the best thing she can do.
- Your solution....

6. Can I use what I have already learned?

Mega Weapons, Inc. (MW) has been awarded a lucrative contract with the U.S. military to develop guided, non-nuclear missiles. This contract is based on MW's considerable success in developing highly accurate computer guidance systems. While working with MW, you have had access to the details of these guidance systems, including information owned by MW and protected by the law. Recently, you have received a job offer from Amaco Arms, Inc. (AA). This offer came about through an unsolicited recommendation by a former classmate of yours; he now works for Amaco, is familiar with your experience and expertise, and suggested to his supervisors at Amaco that they try to hire you away from Mega Weapons. You will be helping them develop guidance systems for missiles and will be doing work similar to the work you are doing with Mega Weapons. AA

competes directly with ME for military weapons contracts. It is more than likely that protected information you have had access to while working with Mega Weapons would be useful for what you would be doing with Amaco.

What would you do if you were in this position>

- You should accept the new job. After all, your classmate has done you a favor. It's a lot more money, and you are certainly in a position to help AA.
- You should not accept this job offer since it is clear that your former classmate and AA are only interested in the proprietary and confidential information you have about MW.
- You should accept the job but only after you have done two things. First, you need to consult with MW to define precisely the boundaries of your confidentiality obligations. Then you should make these boundaries clear to AA and only if they accept these boundaries should you agree to work for them.
- Your solution....

7. You Can't Take It With You

You are leaving Computing Systems, Inc. to work for Compware, Inc., a competitor. Before you leave Computing Systems, you are debriefed by the Personnel Office and a company lawyer on the proprietary information you have had access to while working with Computing Systems. They have itemized the information that you cannot divulge to or use in your work with Compware. It is your professional judgment that they are including information that is general knowledge and should not be considered confidential or proprietary. It is also information that would be useful—even essential—for what you will be doing in your new job. You feel that this confidentiality agreement is overly restrictive and would handicap you in your new job. What should you do?

How should you respond to CSI's restrictions on what you can and cannot disclose in your new work with Compware?

1. You should assert your rights to make use of all the information that your training has provided you. This includes especially the innovations you introduced to CSI. Because this is the result of your hard work you should be able to take it with you to your new job.

2. Even though CSI's confidentiality boundaries are, in your opinion, restrictive, you have no choice but to accept them. Make these boundaries clear to Compware and hope that they still want your services.
3. You need to consult a lawyer here. Clearly CSI is trampling on your legal rights but you will need expert help to assert them.
4. Your solution....

More on Full and Honest Disclosure: Terms of Interview

Full Disclosure also pertains to providing full disclosure of the terms of the interview as well as full disclosure of the terms of employment should the search reach this point.

- Full disclosure would include providing the job candidate with a detailed itinerary of the interview process. As we will see in the case below, some interviewers deliberately leave off certain items to create surprises.
- Full disclosure of the nature of the job should include a detailed description of routine activities as well as non-routine possibilities. An example of a significant non-routine task would be that occasions may arise where an employee may at some point be called upon to work on a weapons project.
- In short, the job candidate should be given, during the interview, an orientation on work responsibilities, places in which the work will be carried out, and the colleagues with whom he or she will be working.

8. Oh, by the way...

Pedro, who will graduate at the end of the current semester, is a student at a well known Hispanic serving university. He and two of his classmates are flown by Comp-Org for an interview at company headquarters. During a phone conversation with the company representative setting up the interview, he asks if there is anything he should do to prepare for the interview. The company representative answers, "No." Pedro receives a faxed itinerary of the interview--it looks routine. So Pedro and his classmates board the plane and arrive at their destination, the company headquarters. The company official who meets them at the airport tells them

that the first item on the interview agenda is a drug test. When Pedro objects--"Why weren't we told about this before we agreed to the interview?"--he is told that if this is unacceptable to him, he can get right back on the plane because the interview is over for him.

What should Pedro do?

- He should get on the plane. This act on the part of the interviewer violates his right of prior disclosure of the terms of the interview.
- He should submit to the drug test. After all, he should have reasonably expected that the company would do something like this. Since whether or not he has a drug habit is highly job relevant, the company has a right to this information.
- He should file a grievance against the company for discriminating against Hispanics.
- Your solution....

Employers should also treat information about job candidates and employees as confidential

In the following case, examine whether information about why a former employee with your company had been fired is or is not confidential and should or should not be included in any recommendation you write for that employee.

9. The Recommendation

A worker under your supervision has recently been fired for incompetence and repeated violations of confidentiality. Several weeks later, the worker returns to ask you for a letter of recommendation. He says you owe it to him; you fired him and he has not been able to find any work and has a family to support.

What should you do?

1. Write the letter and withhold information about the employee being fired. While he may be a slacker, you should help him as a means of helping his family.
2. Write the letter but include the information about the employee being fired. If you frame it properly, maybe he will get a job and be able to support his family.

3. Refuse to write a letter. If you leave out what the prospective employer considers crucial information you may be liable for any harm this slacker causes. And you wouldn't be doing the former employee any favor in writing the letter because you would be wrong to conceal information about his being fired.
4. Your solution....

Finally, interviewers and employers have the obligation to treat job candidates and employees with dignity. This includes respecting privacy and refraining from harassment. The following case raises interesting questions about just what constitutes harassment during an interview.

- A recent graduate from University X, Marta has a strong and successful interview with a representative from a local, respected company. She discussed her skills, experience, and asked several perceptive questions about working conditions, job responsibilities, and benefits. The interviewer, obviously impressed, asked Marta back for a second interview with his supervisor.
- The second interview followed a different course. The interviewer, an older man, did not ask her about her skills or experience. Instead he reminisced about his days as a college student. He talked about his children--what they were studying and their career plans. He mentioned his wife in passing. Then he told Marta that the people who do well in his company are hard workers. "The strongest person," he said, "will do whatever is necessary to survive in a harsh, competitive environment." Then he looked at her hands and asked if she was single and if she still lived with her parents.
- How should Marta answer these questions?
- Do these questions invade Marta's privacy?
- Do the interviewer's questions, comments, and gestures constitute sexual harassment?

Decision Making Exercise and Ethics Tests

Your Task

- You will be divided into groups and assigned a scenario.
- Each scenario involves a difficulty with interpreting and applying an employee guideline concept.
- Interpret and apply the concept as best you can.
- Develop a value integrative solution that resolves the decision point of your scenario.

Values

- **Value:** A value "refers to a claim about what is worthwhile, what is good. A value is a single word or phrase that identifies something as being desirable for human beings." Brincat and Wike, *Morality and the Professional Life: Values at Work*
- **Justice:** Justice as fairness focuses on giving each individual what is his or her due. Three senses of justice are (1) the proper, fair, and proportionate use of sanctions, punishments and disciplinary measures to enforce ethical standards (retributive justice), (2) the objective, dispassionate, and impartial distribution of the benefits and burdens associated with a system of social cooperation (distributive justice), (3) an objectively determined and fairly administered compensation for harms and injustices suffered by individuals (compensatory justice), and (4) a fair and impartial formulation and administration of rules within a given group.
- **Respect:** Recognizing and working not to circumvent the autonomy in others and ourselves. (Autonomy is the capacity to make and execute decisions as well as to set forth ends and goals, integrate them into life plans, and use these to constitute active identities.) Respect involves recognizing and respecting rights such as privacy, property, free speech, due process, and free (and informed) consent. Disrespect undermines autonomy through deception, force, or manipulation.
- **Responsibility:** The ability to develop moral responses appropriate to the moral issues and problems that arise in one's day-to-day experience. Responsibility includes several senses: (1) individuals are (capacity) responsible when they can be called upon to answer for what they do; (2) individuals have (role) responsibilities when they commit to carry out tasks that arise from social and professional roles; (3) responsibility also refers to the way in which one carries out one's

obligations. It can range from indifference and negligence to care and diligence. Responsibility in this sense turns into a virtue that formulates diligence and care as excellences worth striving for.

- **Honesty** – Is honesty telling the truth, the whole truth, and nothing but the truth? Or is it a virtue that involves a more delicate balance between extremes of excess and defect? Too much honesty results in harmful bluntness and tactlessness. (“Your child is a hopeless slob. You should disown him.” The former may be true but there are gentler and ultimately more productive ways to communicate this information to the concerned parent.) We are all familiar with too little honesty, the dishonesty that results from lying, deceiving, manipulating, exaggerating, distorting, etc.
- **Reasonableness** - Defusing disagreement and resolving conflicts through integration. Characteristics include seeking relevant information, listening and responding thoughtfully to others, being open to new ideas, giving reasons for views held, and acknowledging mistakes and misunderstandings. Thus, reasonableness as a virtue includes much more than rationality. (From Michael Pritchard, Reasonable Children)

In making your decision...

1. Try to design a solution that realizes as many values as possible.
2. Wike: “Although values can compete, they don’t conflict.” Try to solve the value competitions in your scenario by integrating the competing values in a solution.
3. Wike: “No value necessarily overrides any other.”
4. Wike: “Aim to realize all values, but where that is impossible, enact the most important values and/or the greatest number of values.”

Having Trouble? Try this...

1. **Nolo Contendere.** Take the path of least resistance. (Just go along with what the dominant person in the situation says.)
2. **Negotiate.** Try to persuade those in the situation to accept a value-integrative solution, compromise, or trade off.
3. **Oppose.** Someone is trying to force you to do something wrong. Get some courage. Oppose the wrongdoer.

4. **Exit.** You can't win in this situation so find a way of getting out. Let someone else deal with it.
5. These options can be evaluated and ranked in terms of the values they realize (or don't realize) and how feasible they are in the given situation.

Try these ethics tests

1. **REVERSIBILITY:** Would I think this a good choice if I were among those affected by it?
2. **PUBLICITY:** Would I want this action published in the newspaper?
3. **HARM:** Does this action do less harm than any available alternative?
4. **FEASIBILITY:** Can this solution be implemented given time, technical, economic, legal, and political constraints?

References

1. Victoria S. Wike, "Professional Engineering Ethical Behavior: A Values-based Approach". **Proceedings of the 2001 American Society for Engineering Education Annual Conference and Exposition**, Session 2461.
2. Michael S. Pritchard (1996) **Reasonable Children: Moral Education and Moral Learning**. Lawrence, KS: University of Kansas Press: 11.
3. Stephen H. Unger (1994) **Controlling Technology: Ethics and the Responsible Engineer**. New York: John Wiley and Sons: 315-325 (Reprinted with permission of IEEE)
4. Robert C. Solomon (1999) **A Better Way to Think About Business: How Personal Integrity Leads to Corporate Success**. Oxford, UK: Oxford University Press: 71-114.
5. See Onlineethics, www.onlineethics.org, for case on which "Oh, By the Way" is based.

Conclusion

What have you achieved?

1. You have become aware of how ethical issues can arise in the job candidacy process.
2. You have a better of your obligations and rights in the job candidacy process.
3. You have practiced decision making by evaluating and ranking solutions to ethics cases.
4. You have worked with integrating important ethical values into solutions to ethical problems.

Presentation of Module before Mechanical Engineering Class

Presentation: Being an Ethical Job Candidate

<https://cnx.org/content/m14468/>

This figure contains a powerpoint presentation of this module used in a Mechanical Engineering Capstone Design course during Spring and Fall semesters, 2007.

Gray Matters in Job Searches

<https://cnx.org/content/m14468/>

This word file presents four of the above scenarios in Gray Matters form. It provides a useful handout as well as an abbreviated version of this activity.

Presentation: Nov 2010

<https://cnx.org/content/m14468/>

Presentation February 2012

<https://cnx.org/content/m14468/>

Workshop Exercises

<https://cnx.org/content/m14468/>

EAC Toolkit Instructor Module: Being An Ethical Job Candidate

REFERENCE OR LINK TO STUDENT MODULE

- Link or Reference to the corresponding student module in Connexions® (cnx.org)
- Reference or Link to the corresponding student module. For example:
Module Sources
 - IEEE Professional Employment Guidelines for Engineers and Scientists published by Stephen Unger in **Controlling Technology: Ethics and the Responsible Engineer**.
 - Cases based on situations presented to the author in Practical and Professional Ethics classes at the University of Puerto Rico at Mayaguez.
 - Case found at Online Ethics describing a surprise drug test during an interview. This case has been revised here to incorporate other student experiences.

INSTRUCTOR RESOURCES(Sharing Best Practices in EAC!)

This section contains information related to the above referenced Student Module. The intent and expectation is that the information contained in this section will evolve over time based on the experiences and collaborations of the authors and users of the Student Module and this Instructor Module. For example, the authors, collaborators or users can provide the following kind of information (mainly directed at or intended for instructors).

Module-Background Information

Where did this module come from? (e.g. A workshop, news story, based on a movie, etc.) What condition is it in? (e.g. first draft, needs editing, publishable, etc.) How has it been used in the past? (e.g. in classroom, workshop activity, ethics debate, etc.) Other relevant or interesting details

This module comes from students who have shared their experiences as job candidates during practical and professional ethics classes held at the University of Puerto Rico at Mayaguez. It also comes from an attempt to disseminate and apply the Guidelines for Employment for Engineers and Scientists developed by the IEEE and published in Stephen Unger's book, **Controlling Technology**. (See complete references below.)

Learning Objectives

What are the intended learning objectives or goals for this module? What other goals or learning objectives are possible?

Content Objectives

The content objectives presented below come from the AACSB Ethics Education Task Force Report. A similar list could be developed using ABET a-k criteria.

Content Objectives

- **Ethical Leadership (EL):** (a) “Expanding...awareness to include multiple stakeholder interests and...developing and applying...ethical decision-making skills to organizational decisions in ways that are transparent to...followers.” (b) “Executives become moral managers by recognizing and accepting their responsibility for acting as ethical role models.”
- **Decision-Making (DM):** “Business schools typically teach multiple frameworks for improving students’ ethical decision-making skills. Students are encouraged to consider multiple stakeholders and to assess and evaluate using different lenses and enlarged perspectives.”
- **Social Responsibility (SR):** “Businesses cannot thrive in environments where societal elements such as education, public health, peace and personal security, fidelity to the rule of law, enforcement of contracts, and physical infrastructures are deficient.”
- **Corporate Governance (CG):** (a) “Knowing the principles and practices of sound, responsible corporate governance can also be an important deterrent to unethical behavior.” (b) “Understanding the complex interdependencies between corporate governance and other

institutions, such as stock exchanges and regulatory bodies, can be an important factor in managing risk and reputation.”

Below are four different sets of skills objectives:

- Four levels of development spelled out by David R. Haws for Engineering Ethics
- Skill objectives used at UPRM in various EAC efforts
- The Hastings Center List
- A list presented by Huff and Frey (referenced below) that combines recent research in moral psychology with skills useful for students learning the practice and profession of computing that includes computer science, computer engineering, and software engineering

Four Development Levels from Haws

- Haws provides a development scale that measures different degrees and kinds of moral reasoning and moral autonomy. Success is measured in terms of accomplishing principle-based moral reasoning where principles are internalized and seen as the manifestation of a morally autonomous will
- **Instilling moral principles as dogma:** (A “minimalist approach that would leave our students with formulated dogma—principles of right and wrong such as the National Society for Professional Engineers (NSPE) Code of Ethics for Engineers—but without any insight into the genesis of these principles” (204))
- **Manipulating Moral Principles with Heuristics:** (“systematic procedures like problem-solving heuristics that focus on the piece-wise solution of simplified ethical dilemmas” (208) Example: Vivian Weil’s iterative (non-linear) design model which can be found in Davis, Ethics and the University.
- **Inducing Moral Principles through Case Studies:** (“ A macro-ethics approach—helping students to inductively construct a posteriori principles from case studies—goes beyond the simple statement or manipulation of principles, but falls short of linking personal moral principles to the larger, social context.” (204))
- **Understanding Moral Values through Meta-analysis:** (“students will need to not only encounter important ethical theories but will need

to experience the minds where those theories evolved. This can only be accomplished...with a critical reflection on primary source readings.” (209))

UPRM Ethical Empowerment Skills List

- UPRM Objectives are described in the context of faculty development workshops in the Science and Engineering Ethics article by Cruz and Frey referenced below:
- **Ethical Awareness** is promoted by discussing cases and scenarios in which are embedded basic moral concepts (duty, right, good) and intermediate moral concepts (conflict of interest, privacy, confidentiality). By showing students how these concepts are present in everyday professional and occupation experience, ethical awareness dramatizes the importance of ethics in everyday experience and emphasizes the need to understand these ethical considerations as thoroughly as possible.”
- **Ethics and the University Ethical Evaluation:** “ the ability to assess a product or process in terms of different ethical approaches such as utilitarianism, rights theory, deontology, and virtue ethics.” This skill can be demonstrated by ranking solution alternatives to decision points provided in cases and scenarios in terms of ethics tests that partially encapsulate ethical theory. Tests such as reversibility, harm, and publicity are useful in this context because they (partially) embody the ethical approaches of deontology, utilitarianism, and virtue ethics, respectively. (See Davis - for more about the ethics tests and for more ethics tests.)
- **Ethical Integration:** “the ability to integrate—not just apply—ethical considerations into an activity (such as a decision, product or process) so that ethics plays an essential, constitutive role in the final results.” It can also be described as the skill of systematically designing solutions that integrate moral value that can be manifested when students use a decision-making heuristics such as the Software Development Cycle or the Seven-Step Decision-Making Framework to resolve problems raised in ethics cases or scenarios.
- **Ethical Problem Definition:** the ability to (a) uncover potential ethical and social problems latent in a socio-technical system and (b)

develop effective counter-measures to prevent these latent problems from materializing or to minimize their harmful or negative impact. Ethical Problem Definition makes use of socio-technical system analysis to uncover latent ethical problems and formulate effective counter/preventive measures.

- **Value Realization:** “the ability to recognize and exploit opportunities for using skills and talents to promote community welfare, enhance safety and health, improve the quality of the environment, and (in general) enhance wellbeing. It involves employing technical knowledge, experience, and expertise toward the end of realizing moral values.

Hastings Center Goals

- Stimulate the moral imagination of students
- Help students recognize moral issues
- Help students analyze key moral concepts and principles
- Elicit from students a sense of responsibility
- Help students to accept the likelihood of ambiguity and disagreement on moral matters, while at the same time attempting to strive for clarity and agreement insofar as it is reasonably attainable (from Pritchard, Reasonable Children, 15)

Goals for ethical education in science and engineering derived from psychological literature (Huff and Frey)

- Mastering a knowledge of basic facts and understanding and applying basic and intermediate ethical concepts.
- Practicing moral imagination (taking the perspective of the other, generating non-obvious solutions to moral problems under situational constraints, and setting up multiple framings of a situation)
- Learning moral sensitivity
- Encouraging adoption of professional standards into the professional self-concept
- Building ethical community

Instructional / Pedagogical Strategies

Which pedagogical or instructional strategies are used or suggested for this module. (For example: Discussion/Debate, Decision-Making Exercise, Presentation, Dramatization or Role Playing, Group Task, Formal or Informal Writing, Readings, among others)

This module employs the following pedagogical strategies:

- **Formal Presentation:** Instructor presents IEEE Guidelines to students along with cases. Presentation can include other experiences that students and instructors have had concerning situations that arise in job searches, interviews, and negotiations over employment contracts.
- **Case Discussion:** Students discuss cases as a class or in small groups. The advantage of having students break into smaller groups is that there is more opportunity for individual discussion.
- **Informal Writing:** This module can be organized to allow for informal writing. For example, students could begin the module by writing informally over whether they think there are ethical problems that arise in job candidacy and, if so, what are the problems they have experienced. If students work through the decision points posed by the cases, the discussion groups could prepare written debriefing summaries.
- **Cooperative Learning:** Students are divided into teams to discuss different cases, conceptual difficulties, respond to decision points, and evaluate the solution alternatives given after some of the cases.
- Other possibilities lie in converting this module into Pre-Test or Gray Matters form. This would allow for different pedagogical strategies. Also, some of these cases have been successfully used in the UPRM Practical and Professional Ethics Bowl debates.
- **Eliciting Knowledge:** Skillily led discussions with questions and just-in-time comments can help to elicit knowledge from students and lead them to reflect on and structure better their knowledge and experience.

Assessment / Assurance of Learning

What assessment or assurance of learning methods are used or suggested for this module? (For example: 1-minute paper, Muddiest Point, Quiz/Test Items, Oral Presentation, Student Feed-back, among others). What did or didn't work?

Informal Assessment

- Preparing solution evaluation tables would help to provide assessment of decision making and ethical evaluation skills of students.
- Preparing a socio-technical system table outlining the components of the interviewing situation would help students to define problems and assess this activity.
- Students could role play as job candidates and interviewers and write scripts which would also contribute to assessment efforts.

EAC matrix

<https://cnx.org/content/m14479/>

This EAC Matrix identifies the learning objectives of the corresponding student module by cross referencing the moral development objectives, accreditation criteria, and the curricular "space" the module fills.

Muddiest Point Assessment Form

<https://cnx.org/content/m14479/>

The attached word document provides a handout to assess this module in terms of its

weakest and strongest
points.

Module Assessment Form

<https://cnx.org/content/m14479/>

This figure contains an
assessment handout that
modifies a form developed
by Michael Davis for IIT
EAC workshops.

Pedagogical Commentary

Any comments or questions regarding this module? (For example: suggestions to authors, suggestions to instructors (how-to), queries or comments directed o EAC community, pitfalls or frustrations, novel ideas/approaches/uses, etc.)

- **This module combines presentation and discussion formats:** First presented by William Frey before students in a Mechanical Engineering Capstone Design course in spring 2007, this module integrates instructor presentation and student discussion. The student discussion begins with the class interacting with the presenter and then moves to more focused discussions of case scenarios in small student groups. This first presentation of the module followed closely the slides in the PowerPoint file provided below.
- **Small Group Discussion Worked Well:** After a quick preview of the Employment Guidelines, the important concepts (e.g., Sincere Interest), and the cases, the students were divided into small groups of four (the entire class consisted of around 60 students) and each group was assigned one of the 10 cases provided in the presentation. Students discussed the cases and responded to the decision points in the

scenarios by designing value-realizing solutions. Then around half of the 10 groups debriefed. The entire activity took three hours.

- **Student Mentors:** In presenting the module before a large class of over 60 students, the instructor had help from mechanical engineering students taking business ethics who mentored their mechanical engineering peers. Business Ethics student mentors floated from one small discussion group to another to help these groups integrate values and ethics tests into their solutions to the decision points. Student mentoring has the potential to play a greater role in ethics integration exercises and also helps establish productive links between freestanding ethics courses and EAC integration exercises.
- **Module could be converted into Gray Matters Format:** Faculty members attending the presentation suggested providing solution alternatives after the cases and having the students rank and evaluate these alternatives. They felt this would allow for a more focused use of the ethics tests (reversibility, harm, publicity) as well as the values test. The student module developed after the presentation includes solution alternatives to the decision points of the scenarios.
- **Students will express interest and want to share their experiences:** Leaving space in the presentation for student comments led to several, unexpected but beneficial incidents. For example, students discussed non-disclosure clauses they had encountered in internship work and one student described his experience with a drug test held during an interview. Several students had specific questions about confidentiality and job mobility issues and one student discussed concerns about working on weapons projects one-on-one with the presenter.

Module Presentation

<https://cnx.org/content/m14479/>

PowerPoint presentation
upon which the student
module is based.

New Scenarios from Spring and Fall 2007

- The student module, **Being and Ethical Job Candidate**, has been taught two times now, the first in the Spring semester of 2007 and the second in the Fall semester of 2007. During these activities, participants suggested several scenarios which could and should be developed into cases for future versions of this workshop
- **Scenario 1:** Students in a Mechanical Engineering design class spend part of their semester working on site at a local industry. Even though this is primarily for academic credit and experience, students during their work will have access to confidential proprietary information. To prevent this from falling into the hands of competitors, students are required to sign "non disclosure agreements." In one semester, the non disclosure agreement was so strict that the professor did not have enough information to evaluate the students' work for their grade.
- **Scenario 2:** A recruiter at the UPRM Job Fair recently complained about several UPRM students he invited to his company for interviews. Even though they pretended to have a "serious interest" in the job and accepted travel funds to fly to the interview, it soon became apparent that their interest was not serious. The recruiter pointed out to a faculty member that this would hurt future students at UPRM because this company would be reluctant to recruit there in the future.
- **Scenario 3:** A course in mechanical engineering requires that students work on site at a local industry. At the last minute, the human resources department told the professor of the course that all students who planned to work there had to take a drug test. Many of the students objected and told the professor that they would not have signed up for the course if they had known that they would have had to take this drug test. Was it proper to require that the students undergo a drug test? With what kind of advance warning is required in this situation? Is it the violation of UPRM policy or any university's policy to require drug tests in these circumstances? Could universities develop procedures to prevent these kinds of problems in the future? What kind of procedures?

Appendix (Annotated)

Bibliographical Information

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12. **Science and Engineering Ethics**, David R. Haws (2004) **The Importance of Meta-Ethics in Engineering Education**, 10(2): 204-

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13. See above link to Online Ethics, www.onlineethics.org, for case on which “Oh, By the Way” is based.

Additional information or annotations for instructors regarding the Student
Module Appendix

EAC Toolkit - Assessment Tools Module

REFERENCE OR LINK TO STUDENT MODULE

- **This module has been developed for a workshop in ethics across the curriculum that will be held May 9, 2007. It recommends EAC as an effective and efficient strategy for AACSB ethics compliance. It also recommends the EAC Toolkit (situated in Connexions) as a ideal place to develop, refine, and disseminate best practices in EAC.**
- Links to rubrics posted in Business Administration at Scranton University and a Toolkit Rubric module have been included to provide a broad range of assessment instruments that can aid in charting continuous improvement in EAC.
- The rubrics and assessment forms developed below come from a variety of sources including a DOLCE workshop (Doing Online Computer Ethics sponsored by the NSF), and an Illinois Institute of Technology EAC workshop led by Michael Davis and sponsored by the NSF. Finally, some of the rubrics have been modified from rubrics used in practical and professional ethics taught at the University of Puerto Rico - Mayaguez.

INSTRUCTOR RESOURCES(Sharing Best Practices in EAC!)

This section contains information related to the above referenced Student Module. The intent and expectation is that the information contained in this section will evolve over time based on the experiences and collaborations of the authors and users of the Student Module and this Instructor Module. For example, the authors, collaborators or users can provide the following kind of information (mainly directed at or intended for instructors).

Module-Background Information

Sources of this module can be gleaned from the links that accompany it. Starting with a DOLCE workshop held at the Colorado School of Mines in summer 2000, UPRM ethicists have been collecting assessment tools and modifying them to fit courses in practical and professional ethics as well as more contextualized ethics across the curriculum integration modules for mainstream business, science, and engineering classes. Many of the tools included in this module have been tested in the classroom.

Learning Objectives

What are the intended learning objectives or goals for this module? What other goals or learning objectives are possible?

Content Objectives described below come from the AACSB Ethics Education Task Force Report

- **Ethical Leadership (EL):** "Expanding ...awareness to include multiple stakeholder interests and ...developing and applying...ethical decision-making skills to organizational decisions in ways that are transparent to...followers." (b) "Executives become moral managers by recognizing and accepting their responsibility for acting as ethical role models."
- **Decision-Making (DM):** "Business schools typically teach multiple frameworks for improving students' ethical decision-making skills. Students are encouraged to consider multiple stakeholders and to assess and evaluate using different lenses and enlarged perspectives."
- **Social Responsibility (SR):** "Businesses cannot thrive in environments where societal elements such as education, public health, peace and personal security, fidelity to the rule of law, enforcement of contracts, and physical infrastructures are deficient."
- **Corporate Governance (CG):** (a) "Knowing the principles and practices of sound, responsible corporate governance can also be an important deterrent to unethical behavior." (b) "Understanding the complex interdependencies between corporate governance and other institutions, such as stock exchanges and regulatory bodies, can be an important factor in managing risk and reputation."

Below are three different sets of skills objectives:

- Skill objectives used at UPRM in various EAC efforts
- The Hastings Center List
- A list presented by Huff and Frey (referenced below) that combines recent research in moral psychology with skills useful for students learning the practice and profession of computing that includes computer science, computer engineering, and software engineering

UPRM Ethical Empowerment Skills List

- UPRM Objectives are described in the context of faculty development workshops in the Science and Engineering Ethics article by Cruz and Frey referenced below:
- **Ethical Awareness:** “the ability to perceive ethical issues embedded in complex, concrete situations. It requires the exercise of moral imagination which is developed through discussing cases that arise in the real world and in literature.”
- **Ethical Evaluation:** “ the ability to assess a product or process in terms of different ethical approaches such as utilitarianism, rights theory, deontology, and virtue ethics.” This skill can also be demonstrated by ranking solution alternatives using ethics tests which partially encapsulate ethical theory such as reversibility, harm, and publicity.
- **Ethical Integration:** “the ability to integrate—not just apply—ethical considerations into an activity (such as a decision, product or process) so that ethics plays an essential, constitutive role in the final results.”
- **Ethical Prevention:** the ability to (a) uncover potential ethical and social problems latent in a socio-technical system and (b) develop effective counter-measures to prevent these latent problems from materializing or to minimize their harmful or negative impact. "Ethical" is an adjective that modifies “prevention”; hence ethical prevention does not mean the "prevention of the ethical" but the "prevention of the unethical", i.e., the harmful, the untoward, the incorrect, and the bad.
- **Value Realization:** “the ability to recognize and exploit opportunities for using skills and talents to promote community welfare, enhance

safety and health, improve the quality of the environment, and (in general) enhance wellbeing.

Hastings Center Goals

- Stimulate the moral imagination of students
- Help students recognize moral issues
- Help students analyze key moral concepts and principles
- Elicit from students a sense of responsibility
- Help students to accept the likelihood of ambiguity and disagreement on moral matters, while at the same time attempting to strive for clarity and agreement insofar as it is reasonably attainable (from Pritchard, Reasonable Children, 15)

Goals for ethical education in science and engineering derived from psychological literature (Huff and Frey)

- Mastering a knowledge of basic facts and understanding and applying basic and intermediate ethical concepts.
- Practicing moral imagination (taking the perspective of the other, generating non-obvious solutions to moral problems under situational constraints, and setting up multiple framings of a situation)
- Learning moral sensitivity
- Encouraging adoption of professional standards into the professional self-concept
- Building ethical community

Instructional / Pedagogical Strategies

Assessment / Assurance of Learning

Muddiest Point Exercise

<https://cnx.org/content/m14498/>

This file contains a

handout in Word format called the "Muddiest Point" Exercise or a "Muddy Point" exercise. It encourages students to reflect on an activity and identify its strongest and weakest points.

EAC Module Assessment Form

<https://cnx.org/content/m14498/>

This Word file consists of a handout that allows students to assess ethics integration exercises. It has been modified from a form used by Michael Davis at the Illinois Institute of Technology to assess EAC modules developed during NSF-funded EAC workshops.

EAC Matrix for AACSB

<https://cnx.org/content/m14498/>

This EAC Matrix helps users to model activities and gaps in EAC programs. It maps courses onto EAC objectives, and AACSB accreditation criteria. It helps both to recognize existing,

ongoing EAC Integration projects and to identify gaps for which new EAC Integration Projects can be designed.

Ethics Bowl Rubric

<https://cnx.org/content/m14498/>

The Ethics Bowl activity has been modified and adapted for the classroom at UPRM in Practical and Professional Ethics classes. The modified score sheets used at UPRM have been reworked into rubric form.

They concentrate on intelligibility, integration of ethical considerations, treatment of feasibility issues, and demonstration of moral imagination and creativity.

Ethics Test Rubric

<https://cnx.org/content/m14498/>

This rubric helps assess success in integrating the ethics tests of reversibility, harm/beneficence, and public identification into a decision-making exercise.

It identifies common
pitfalls and set up
problems.

Ethical Considerations Rubric

<https://cnx.org/content/m14498/>

This rubric can be found at
<http://academic.scranton.edu/departments/assessment/ksom/>
. This uploaded version has minor modifications to fit the
UPRM context.

Pedagogical Commentary

Any comments or questions regarding this module? (For example:
suggestions to authors, suggestions to instructors (how-to), queries or
comments directed to EAC community, pitfalls or frustrations, novel
ideas/approaches/uses, etc.)

Appendix (Annotated)

Additional information or annotations for instructors regarding the Student
Module Appendix